Original Article

The relationship between quality of life and demographic variables in hemodialysis patients

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Abstract

Introduction:
Quality of life is an important criterion in evaluation of medical treatment and status of health and well-being, contributing to the prediction of mortality rate in hospitals. QOL may be affected by diseases and their related complications. This study aims to investigate the relationship between the quality of life (QOL) of hemodialysis patients and demographic variables.

Materials and Methods:
In this descriptive analytic study, SF36 questionnaire was used to examine the QOL of 60 hemodialysis patients in Kerman.

Results:
The mean score of the QOL in hemodialysis patients was 49.83 ± 17.56. The maximum of score was related to the physical activity domain (57.09) and minimum score was given to the vitality domain (43.85). The relationship between quality of life and age, job, literacy and marriage was significant.

Conclusion:
Our results revealed that the QOF in hemodialysis patients was less that in than normal people. It was shown that these patients need to live a happy life. Therefore, appropriate mental support and instruction on compatibility methods can increase their QOF.

Keywords: Quality of life, Hemodialysis, Kidney

Introduction:

Advanced chronic renal failure is a progressive, irreversible disorder in which kidney's ability to excrete metabolic waste, and to maintain fluid and electrolyte balance is diminished, leading to elevated Blood Urea Nitrogen (BUN) (1). Nearly 200 types of toxins (like urea, creatinine, etc) are produced in the body as a result of metabolic processes, and are excreted by the kidneys via urine (2). Factors contributing to the increasing number of patients are patients' older age due to advances in dialysis and kidney transplant and disproportionate increase of kidney failure in some groups; for example, increasing proportion of elderly people in the population pyramid in Asia. Statistics reveal an increase in population older than 65 years undergoing dialysis from 2% in

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1970 to 30% in 1989 (3). When more than 95% of kidney tissue is damaged due to various diseases, toxins are accumulated so much in the body that it is impossible to survive without dialysis or a kidney transplant (4). Clinical signs of kidney failure include loss of appetite, nausea, vomiting, hemorrhage, memory and consciousness disorders, and ultimately convulsions and pericarditis, leading to simultaneous increase in blood potassium levels, blood pressure, and body fluid volume. Other signs are congestive heart failure, anemia, bone diseases and low serum calcium, abnormal vitamin D metabolism, and elevated aluminum levels (3). When kidneys fail to function properly, process of dialysis takes over such functions as excreting bodily fluids and uremic waste products. The most common type of dialysis is hemodialysis (5). Some chronic renal failure complications are well controlled by dialysis such as gastrointestinal symptoms, dizziness, and confusion. But some other complications are only moderately or even poorly controlled like disorders of water and electrolyte balance including hyperkalemia and acidosis, heart failure, hypertension, pericarditis, anemia, neuropathy, and amenorrhea. Whilst, reduced growth before puberty, lack of sexual maturation and reduced libido are generally little affected by dialysis (2).

Among complications that cannot be controlled by dialysis is atherosclerosis, which is the leading cause of death in this group of patients. Three months after the onset of disease and start of treatment, patients feel their quality of life has severely reduced (5). Reduced quality of life in patients undergoing dialysis can take many different dimensions including physical dimension that affects patients' daily functioning (5), leading to dependence on others and reduced self confidence and feeling of loneliness, and thus affecting socio-psychological dimension, as well (6).

Whilst stressors may remain in patients with chronic renal failure undergoing hemodialysis, in some cases these factors may even be exacerbated. Hemodialysis patients are constantly faced with physical, mental, and social stresses, and feel uncertain about future (7). Therefore, studying quality of life in these patients is highly important. An evaluation of quality of life in hemodialysis patients was first reported in 1975. Interviews with patients revealed that only a third of patients had an acceptable quality of life (7). A study by Raymond et al. showed that in relation to physical functioning and general health, quality of life in hemodialysis patients is considerably reduced. This reduction also extended to emotional and psychological health (8). Walter et al. also reported reduced quality of life in chronic renal failure patients once dialysis had began (9). However, Gibson et al. reported a high quality of life in these patients (10). Esmaily et al. also reported relatively good quality of life in patients (11). With conflicting results on the one hand and growing number of hemodialysis patients on the other, this study was conducted to determine the level of quality of life in these patients in relation to demographic variables of age, sex, marital status, duration of dialysis and employment in Kerman, Iran.

Materials and Methods:

This descriptive-analytical study was conducted in 2010 in Kerman to assess quality of life in hemodialysis patients and its relationship with demographic variables. Study population consisted of all patients (110) attending Kerman city hemodialysis centers. Inclusion criteria included age between 18 and 70 years, no other chronic diseases (disabilities, debilitating diseases like MS, all types of cancer), no addiction to drugs or alcohol (according to patient's self-declaration), twice weekly dialysis for over three months, and consent (1). Data were collected through SF36 questionnaire

(short form- 36 questions) in two parts. Part one was demographic questions and part two comprised 11 questions about different aspects of life including social functioning and role limitations -physical, bodily pain, mental health, role limitations-emotional, and general medical health. Questions were scored by Likert scale (higher score meant better quality of life) (12). Validity and reliability of the Persian version of the questionnaire had been previously confirmed in a study by Montazeri in 2005 (13). A questionnaire was issued to each patient and study objectives and method were explained and signed consents were obtained. Then, patients were asked to complete the questionnaire. Completed questionnaires were collected on the same day and data were analyzed by SPSS-15 software, with descriptive statistics for assessing level of quality of life, independent t-test for comparison between patients, and Pearson-Spearman correlation coefficient for determining the relationship.

Results:

Out of a total of 60 patients, 31 (51.7%) were women and the rest men, and 12 (20%) were single and 48 married. The mean age of patients was 44.28±14.5. Table 1 presents demographic details of the patients. Mean quality of life score was 49.83±17.56, the lowest score related to happiness with 43.85±20.79, and the highest to physical functioning with 57.09±22.9. Quality of life score according to age, education, marital status, and occupation showed a significant difference ($P<0.05$), but in relation to gender, residence location, and duration of dialysis, the difference was insignificant ($P>0.05$). Mean score of the mental health dimension of quality of life was 49.27, and had a significant relationship with marital status, occupation, and age of the patients ($P<0.05$). The mean score of the physical dimension was 49.6, and its relationship with age, occupation, residence location, and education was significant ($P<0.05$) (table 1). The relationship between demographic variables and different aspects of quality of life were found through calculation of Pearson-Spearman correlation coefficient (table 2).

Discussion:

According to the results, the mean score for quality of life in hemodialysis patients was lower than that in general population, which concurs with results in studies by Safizadeh et al. and Harirchi et al. (14, 15). The mean age of patients in this study was less than that in San Young Lee et al. study (16). This could be indicative of decreasing age of affliction with kidney failure in Iran. Also, the lowest score for quality of life related to happiness, and this had a significant correlation with age, occupation, education, and marital status. It appears factors such as dependence on dialysis machine, incurability of the illness, and fatal consequence of stopping dialysis could place the patient in a stressful situation and impair his/her sense of well-being and happy-living. Also, mood disorders (anxiety and depression) in these patients could be secondary to an underlying medical condition like diabetes or hypertension etc. Damaged work quality, reduced physical activity, marital problems due to prolonged illness, lack of financial support, and financial problems are factors that could diminish these patients' quality of life (17). Pearson-Spearman correlation coefficient revealed a significant correlation between patients' quality of life and his current occupation, physical performance, and happiness. Dialysis incurs huge costs on the patient and the possibility of gradually or suddenly losing his/her job, the patient is faced with numerous financial and social difficulties. The patient's inability to meet his/her treatment needs, or even basic living needs, directly influences his/her quality of life (6). In this study, single patients were reported to have a better quality of life compared to married patients. Conversely, a study by Yeldrem

in Turkey revealed a much better quality of life in married patients. This difference is attributed to cultural and life-style differences (18). The results obtained in this study indicated a significant correlation between all aspects of quality of life and education level. In Taghizadeh et al. study too, participants reported a better quality of life with higher education levels (19). Therefore, to improve the quality of life, increasing level of education must be taken into account in socio-economic and health programs. This study found no correlation between gender and quality of life, which was in agreement with Taghizadeh et al. results (19). Yeldrem believes that happiness depends on patient's physical status and his/her connections, but quality of life depends on method of dealing with physical symptoms (18). Thus, frequent dialyses may weaken patients' connections, leading to reduced happiness. In Sharif et al. study, hemodialysis had the highest negative effect on patients' mental health. But in this study, the effect of hemodialysis on physical and mental aspects of quality of life was insignificant. This could be indicative of the reciprocal effects of physical and mental health on each other (17).

Table 1: Demographic details of hemodialysis patients in Kerman

Demographic data	Number	Percentage	Quality of life	P-value
Gender				
Women	31	51.7	48.15	0.4
Men	29	48.3	51.63	
Total	60	100		
Marital status				
Single	12	20	60.3	0.02*
Married	48	80	47.22	
Total	60	100		
Occupation				
Unemployed	7	11.7	66.36	0.01*
Self-employed	3	5	50.42	
Employed	3	5	68.42	
Retired	12	20	50.98	
Disabled	11	18.3	43.41	
Housewife	24	40	44.98	
Total	60	100		
Education				
Illiterate	13	21.7	38.82	0.02*
Literate	24	40	51.04	
Diploma	16	26.7	51.07	
University	7	11.6	63..34	
Total	60	100		
Residence location				
Provincial center	45	75	51.86	0.3
Town	10	16.7	43.94	
Village	5	8.3	43.37	
Total	60	100		

* Statistically significant

Conclusion

Generally, this study showed low quality of life in hemodialysis patients, particularly in the happiness domain. Prerequisites for high quality of life, as described in various articles, include physical fitness, social development, mental health, living in a financially safe environment, and having the ability and power to perform daily tasks. Studies have

shown that social support as well as physical health can directly affect quality of life (20). Therefore, according to the results of this study, qualitative development of care should be attended to because it is directly related to a better quality of life.

Table 2: The relationship between demographic variables and quality of life score

Demographic variables	Physical performance		Quality of life		Psychological dimension		Physical dimension	
	P value	R	P value	R	P value	R	P value	R
Age**	0.003		0.001		0.004		0.01	
Occupation*	0.04		0.006		0.04		0.000	
Education*	0.009		0.02		0.2		0.006	
Marital status*	0.03		0.01		0.02		0.17	

* Obtained from Pearson test
** Obtained from Spearman test

It seems finding ways to improve the quality of life of patients with chronic renal failure, especially those undergoing hemodialysis, ought to be a priority of nursing care. Also, certainty about adequacy of dialysis in maintaining physical fitness and having the ability and power could increase the quality of life in these patients. Additionally, presentation of results of this study to authorities can draw attention to financial, occupational, and educational difficulties that this group of patients are faced with, and whence, take into account these issues in social, economical, and health programs, so that their quality of life may be improved. On the other hand, results indicate low age of renal failure in Iran compared to other countries. Attention to this fact could be helpful in future prevention and early diagnosis programs.

Study limitations

Most patients taking part were elderly and needed help with completing questionnaires. This help was provided by the researcher through interviews with these patients. Also, some patients undergoing hemodialysis could not be asked to allocate more time to complete the questionnaires. Therefore, to save time, questionnaires were completed while they were under dialysis.

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